WE CLAIM:

1. A polymeric composition comprising an addition polymer and about 2 to 25 wt% of an additive, the additive comprising a resinous material having a molecular weight of about 500 to 3000 and an aromatic character wherein the additive is miscible in the polymer.

2. The polymeric composition of claim 1 wherein the polymer is a component of a solution, the solution comprising a major proportion of an aqueous alcoholic solvent and about 3 to 30 wt% of the polymeric composition based on the solution.

3. The composition of claim 1 wherein the addition polymer comprises a polyvinyl halide polymer, a polyvinylidene halide polymer or mixtures thereof.

4. The composition of claim 3 wherein the polyvinylidene halide comprises polyvinylidene chloride.

5. The composition of claim 3 wherein the polyvinylidene halide comprises polyvinylidene fluoride.

6. The composition of claim 1 wherein the polymer comprises a polyvinylalcohol.

7. The composition of claim 6 wherein the polyvinylalcohol is crosslinked with about 1 to 40 wt.% of a crosslinking agent.

8. The composition of claim 7 wherein the crosslinked polyvinylalcohol is crosslinked using a polyacrylic acid having a molecular weight of about 1000 to 3000.

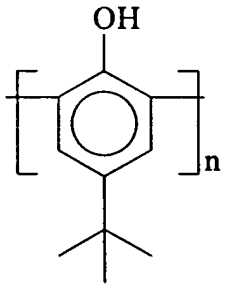
9. The composition of claim 7 wherein the crosslinked polyvinylalcohol is crosslinked using a melamine-formaldehyde resin having a molecular weight of about 1000 to 3000.

10. The composition of claim 1 wherein the polymer comprises a polyvinylchloride.

11. The composition of claim 10 wherein the polyvinylchloride is crosslinked.

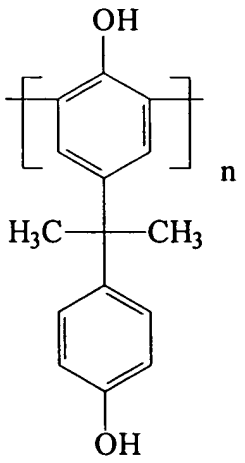
12. The composition of claim 1 wherein the additive comprises an oligomer comprising tertiary butyl phenol.

13. The composition of claim 12 wherein the additive comprises an oligomer comprising:



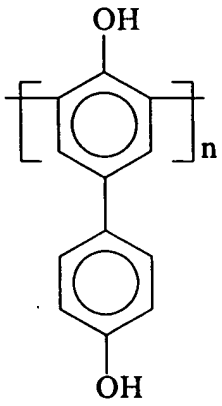
14. The composition of claim 1 wherein the additive comprises an oligomer comprising bis-phenol A.

15. The composition of claim 14 wherein the additive comprises:



16. The composition of claim 1 wherein the additive comprises an oligomer comprising dihydroxy substituted biphenyl.

17. The composition of claim 16 wherein the additive comprises:



18. A polymeric composition comprising a condensation polymer, other than a copolymer formed from a cyclic lactam and a C_{6-10} diamine monomer or a C_{6-10} diacid monomer, and a resinous additive comprising an oligomer having a molecular weight of about 500 to 3000 and an aromatic character wherein the additive miscible in the condensation polymer.

19. The polymeric composition of claim 18 wherein the polymer is a component of a solution, the solution comprising a major proportion of an aqueous alcoholic solvent and about 3 to 30 wt% of the polymeric composition.

20. The composition of claim 18 wherein the condensation polymer comprises a polyalkylene terephthalate.

21. The composition of claim 20 wherein the condensation polymer comprises a polyalkylene naphthalate.

22. The composition of claim 20 wherein the condensation polymer comprises a polyethylene terephthalate.

23. The composition of claim 18 wherein the condensation polymer comprises a nylon polymer comprising a homopolymer having repeating units derived from a cyclic lactam.

24. The composition of claim 18 wherein the nylon copolymer is combined with a second nylon polymer, the second nylon polymer differing in molecular weight or monomer composition.

25. The composition of claim 18 wherein the nylon copolymer is combined with a second nylon polymer, the second nylon polymer comprising an alkoxy alkyl modified polyamide.

26. The composition of claim 24 wherein the second nylon polymer comprises a nylon copolymer.

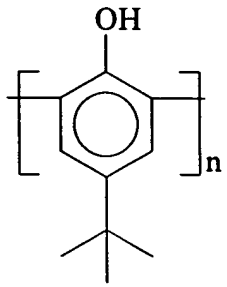
27. The composition of claim 24 wherein the polymers are treated to form a single polymeric composition as measured by a differential scanning calorimeter showing a single phase material.

28. The composition of claim 27 wherein the copolymer and the second polymer are heat treated.

29. The composition of claim 28 wherein the copolymer and the second polymer are heat treated to a temperature less than the lower melting point of the polymers.

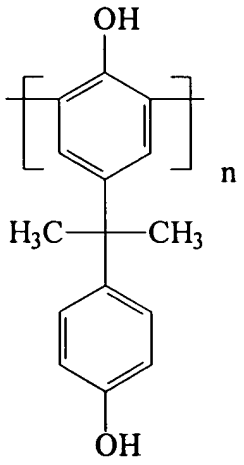
30. The composition of claim 18 wherein the additive comprises an oligomer comprising tertiary butyl phenol.

31. The composition of claim 30 wherein the additive comprises an oligomer comprising:



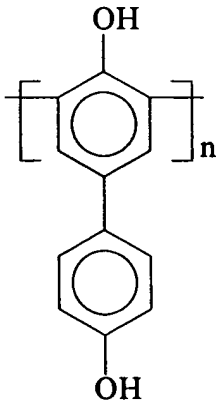
32. The composition of claim 18 wherein the resin comprises an oligomer comprising bis-phenol A.

33. The composition of claim 32 wherein the additive comprises an oligomer comprising:



34. The composition of claim 18 wherein the resin comprises an oligomer comprising dihydroxy biphenyl.

35. The composition of claim 34 wherein the additive comprises an oligomer comprising:



36. The composition of claim 18 wherein the additive comprises a blend of the resinous additive and a fluoropolymer.

37. The composition of claim 18 wherein the additive comprises a fluorocarbon surfactant.

38. The composition of claim 18 wherein the additive comprises a nonionic surfactant.

39. The composition of claim 18 wherein the condensation polymer comprises a polyurethane polymer.

40. The composition of claim 18 wherein the condensation polymer comprises a blend of a polyurethane polymer and a polyamide polymer.

41. The composition of claim 40 wherein the polyamide polymer comprises a nylon.

42. The composition of claim 41 wherein the nylon comprises a nylon homopolymer, a nylon copolymer or mixtures thereof.

43. The composition of claim 18 wherein the condensation polymer comprises an aromatic polyamide.

44. The composition of claim 18 wherein the condensation polymer comprises a reaction product of a diamine monomer and poly(m-phenylene isophthalamide).

45. The composition of claim 40 wherein the polyamide comprises a reaction product of a diamine and a poly(p-phenylene terephthalamide).

46. The composition of claim 18 wherein the condensation polymer comprises a polybenzimidazole.

47. The composition of claim 18 wherein the condensation polymer comprises a polyarylate.

48. The composition of claim 47 wherein the polyarylate polymer comprises a condensation polymerization reaction product between bis-phenol-A and mixed phthalic acids.

49. A polymeric composition comprising the reaction product of an aldehyde reactant and a blend of nylon 4,6 and nylon 6,6.

50. A polymeric composition comprising the reaction product of an aldehyde reactant and a nylon 4,6.

51. A polymeric composition comprising the reaction product of an aldehyde and a nylon 4,6 in the presence of a C_{1-24} alcohol and water.

52. A composition of claim 51 wherein the alcohol comprises a solvent selected from the group consisting of methanol, ethanol, isopropanol, stearic alcohol or mixtures thereof.

53. The composition of claim 52 wherein the aldehyde reactant comprises formaldehyde.

54. The composition of claim 52 wherein the aldehyde reactant comprises acetaldehyde.

55. The reaction product of claim 49 additionally comprising a resinous additive comprising an oligomer having a molecular weight of about 500 to 3000 and an aromatic character wherein the additive is miscible in the condensation polymer.

56. The composition of claim 49 wherein the reaction product is blended with a nylon copolymer.

57. The composition of claim 56 wherein the nylon copolymer comprises repeating units derived from a cyclic lactam, a C_{6-10} diamine monomer and a C_{6-10} diacid monomer.

58. A fine fiber composition comprising an addition polymer and about 2 to 25 wt.% of an additive, the additive comprising a resinous material having a molecular weight of about 500 to 3000 and an aromatic character, wherein the additive is miscible in the polymer.

59. The fine fiber of claim 58 wherein the additive comprises a hydrophobic coating on the fine fiber surface.

60. The fine fiber of claim 59 wherein the hydrophobic coating comprises an oleophobic coating.

61. The fine fiber of claim 60 wherein the hydrophobic and oleophobic coating is formed on a fiber having a hydrophilic composition.

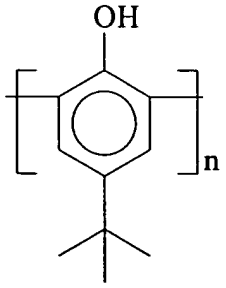
62. The fine fiber of claim 58 wherein the coating has a thickness of less than 100 Å.

63. The fine fiber of claim 58 wherein the coating has a thickness of less than about 80 Å.

64. The fine fiber of claim 58 wherein the coating has a thickness of less than 50 Å.

65. The fine fiber of claim 58 wherein the additive comprises an oligomer comprising tertiary butyl phenol.

66. The fine fiber of claim 65 wherein the additive comprises an oligomer comprising:



67. The fine fiber of claim 58 wherein the resin comprises bis-phenol A.

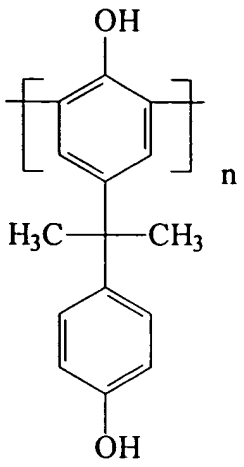
68. The fine fiber of claim 67 wherein the crosslinking agent comprises a polymer comprising repeating units of acrylic acid, the polymer having a molecular weight of about 1000 to 5000.

69. The fine fiber of claim 68 wherein the polymer comprises an acrylic acid copolymer having a molecular weight of 1000 to 5000 .

70. The fine fiber of claim 67 wherein the crosslinking agent comprises a melamine formaldehyde resin.

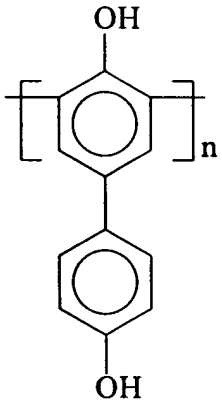
71. The fine fiber of claim 67 wherein the crosslinking agent comprises an aldehyde crosslinking agent substantially free of formaldehyde.

72. The fine fiber of claim 67 wherein the additive comprises an oligomer comprising:



73. The composition of claim 65 wherein the resin comprises an oligomer comprising dihydroxy biphenyl.

74. The composition of claim 73 wherein the additive comprises an oligomer comprising:



75. The fine fiber of claim 58 wherein the diameter of the fiber is about 0.1 to about 2 micron.

76. The fine fiber of claim 58 wherein the diameter of the fiber is about 0.1 to about 0.5 micron.

77. The fine fiber of claim 58 wherein the diameter of the fiber is about 0.05 to about 0.2 micron.

78. The fine fiber of claim 58 comprising a crosslinked polyvinylalcohol, the fiber having a diameter of about 0.01 to 2 microns.

79. The fine fiber of claim 78 wherein the crosslinking agent is present in an amount of about 5 to 50 wt% based on the polyvinylalcohol polymer.

80. A fine fiber composition comprising a condensation polymer, other than a copolymer of a cyclic lactam and a C_{6-10} diamine monomer or a C_{6-10} diacid monomer, and an additive composition having a molecular weight of about 500 to 3000.

81. The fine fiber of claim 80 wherein the additive comprises a hydrophobic coating on the fine fiber surface.

82. The fine fiber of claim 81 wherein the hydrophobic coating comprises an oleophobic coating.

83. The fine fiber of claim 82 wherein the hydrophobic and oleophobic coating is formed on a fiber having a hydrophilic composition.

84. The fine fiber of claim 81 wherein the coating has a thickness of less than about 100 Å.

85. The fine fiber of claim 81 wherein the coating has a thickness of less than about 80 Å.

86. The fine fiber of claim 81 wherein the coating has a thickness of less than 50 Å.

87. The fine fiber of claim 81 wherein the condensation polymer comprises a polyalkylene terephthalate.

88. The fine fiber of claim 87 wherein the condensation polymer comprises a polyalkylene naphthalate.

89. The fine fiber of claim 87 wherein the condensation polymer comprises a polyethylene terephthalate.

90. The fine fiber of claim 81 wherein the condensation polymer comprises a nylon polymer comprising a homopolymer having repeating units derived from a cyclic lactam.

91. The fine fiber of claim 90 wherein the nylon copolymer is combined with a second nylon polymer, the polymer differing in molecular weight or monomer composition .

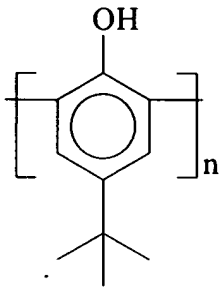
92. The fine fiber of claim 91 wherein the second nylon polymer comprises a nylon copolymer.

93. The fine fiber of claim 91 wherein the polymers are treated to form a single polymeric composition as measured by a differential scanning calorimeter showing a single phase material.

94. The fine fiber of claim 93 wherein the copolymer and the second polymer are heat treated.

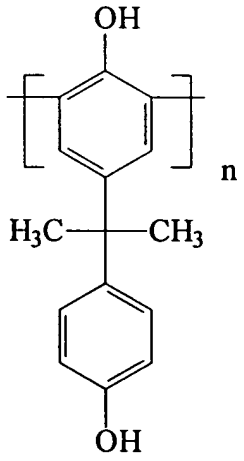
95. The fine fiber of claim 80 wherein the additive comprises an oligomer comprising tertiary butyl phenol linked.

96. The fine fiber of claim 95 wherein the additive comprises:



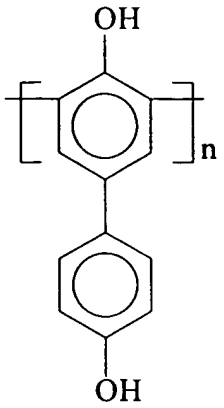
97. The fine fiber of claim 80 wherein the resin comprises bis-phenol A.

98. The fine fiber of claim 97 wherein the additive comprises:



99. The fine fiber of claim 80 wherein the resin comprises an oligomer comprising dihydroxy biphenyl.

100. The fine fiber of claim 99 wherein the additive comprises an oligomer comprising:



101. The fine fiber of claim 80 wherein the diameter of the fiber is about 0.1 to about 0.5 micron.

102. The fine fiber of claim 80 wherein the diameter of the fiber is about 1 to about 0.01 micron diameter.

103. The fine fiber composition of claim 80 wherein the fiber diameter is about 0.2 to 0.1 micron.

104. The fine fiber comprising a fiber having a diameter of about 0.1 to 0.5 micron, the fine fiber comprising the reaction product of an aldehyde reactant and a blend of a nylon 4,6 and a nylon 6,6.

105. The fine fiber of claim 104 wherein the fine fiber comprises the reaction product of an aldehyde reactant and a blend of a nylon 6 and a nylon 6,6 in the presence of a C_{1-24} alcohol and water.

106. The fine fiber of claim 104 wherein the fine fiber comprises the reaction product of an aldehyde reactant and a nylon 4,6.

107. The fine fiber of claim 106 wherein the reaction product of an aldehyde and a nylon 4,6 is conducted in the presence of alcohol and water.

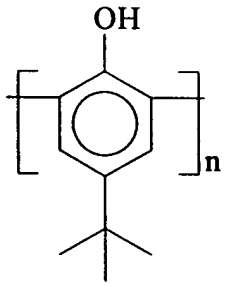
108. The fine fiber of claim 104 wherein the fine fiber additionally comprises a copolymer of a cyclic lactam, a C_{6-10} diamine monomer and a C_{6-10} diacid monomer.

109. The fine fiber of claim 104 wherein the fine fiber additionally comprises a resinous additive comprising an oligomer having a molecular weight of about 500 to 3000 and an aromatic character wherein the additive is miscible in the condensation polymer.

110. A polymeric composition comprising the polymeric reaction product of a nylon 6 and a nylon copolymer comprising a cyclic lactam, a C_{6-10} diamine monomer and a C_{6-10} diacid monomer and a resinous additive comprising an oligomer having a molecular weight of about 500 to 3000 and an aromatic character wherein the additive is miscible in the condensation polymer.

111. A polymer composition of claim 110 wherein the polymeric reaction product comprises nylon 6,6 and the nylon copolymer.

112. The composition of claim 110 wherein the additive comprises an oligomer comprising:



113. A filter media comprising a fine fiber, the fine fiber comprising a fiber size of about 0.01 to 0.5 micron and after exposure to air at 140°F and 100% relative humidity for 1 to 16 hours at least 50% of the fiber remains substantially unchanged.

114. The media of claim 113 wherein the fine fiber layer can be exposed to an alcoholic solvent at 70°F and wherein at least 50% of the fiber remains after 5 minutes.

115. The media of claim 113 wherein a temperature of 160°F is used for 3 hours.

116. The media of claim 113 wherein the fine fiber has a diameter of 0.1 to 0.5.

117. The media of claim 113 wherein the fine fiber has a diameter of 0.01 to 0.2

118. The media of claim 113 wherein the fine fiber layer survives immersion in hot water at 140°F and at least 50% of the fiber survives after 5 minutes.

119. The media of claim 113 wherein the media, when exposed to an air stream having a temperature of about 140°F and a relatively humidity of about 100% greater than about 50% of the fiber survives for more than 16 hours.

120. The media of claim 113 wherein a temperature of 160°F is used.

121. The media of claim 113 wherein the filter media also comprises a woven or non-woven substrate.

122. The media of claim 121 wherein the non-woven substrate comprises a fiber selected from cellulose, glass, polymer, metal, and combinations thereof..

123. The media of claim 113 wherein the substrate comprises spunbonded polymeric non-woven fabric.

124. The media of claim 113 wherein the substrate comprises a woven polymeric fabric.

125. The media of claim 113 wherein the substrate comprises a knit fabric.

126. The media of claim 113 wherein the fine fiber comprises a microfiber having a diameter of about 0.1 to 0.5 micron.

127. The media of claim 113 wherein the fine fiber comprises a nanofiber having a diameter of about 0.01 to 0.2 micron.

128. The media of claim 127 comprising a substrate and the fine fiber layer.

129. A method of making a fine fiber material comprising a fiber having a diameter of about 0.01 to 0.5 micron and a surface coating having a thickness of less than about 100 Å, the method comprises forming a solution comprising a lower alcohol, water or mixtures thereof and about 3 to about 30 wt% of a polymer composition, other than a copolymer formed from a cyclic lactam and a C_{6-10} diamine monomer or a C_{6-10} diacid monomer, and about 2 to 25 wt% of an additive, based on the polymer composition, the additive comprising a resinous material having a molecular weight of about 500 to about 3000 and an aromatic character wherein the additive is miscible in the polymer, exposing the polymer solution to an electric field of a potential greater than about 10×10^3 volts causing the solution to form accelerated strands of solution which upon evaporation of the solvent forms a fine fiber, collecting the fine fiber on a substrate and exposing the fine fiber and substrate to a heat treatment, the heat treatment raising the temperature of the fine fiber to a temperature less than the melting point of the polymer.

130. The method of claim 129 wherein the solvent comprises a combined aqueous alcoholic solvent.

131. The method of claim 129 wherein the solvent comprises a mixture of a major proportion of water and about 10 to 90 wt% of an alcohol selected from the group consisting of methanol, ethanol, isopropanol, n-propanol, butanol or mixtures thereof.

132. The method of claim 129 wherein the polymer comprises an addition polymer.

133. The method of claim 129 wherein the polymer comprises a polyvinyl halide polymer.

134. The method of claim 129 wherein the polymer comprises a polyvinylidene halide.

135. The method of claim 129 wherein the polymer comprises a polyvinylalcohol.

136. The method of claim 129 wherein the polymer comprises a nylon homopolymer.

137. The method of claim 129 wherein the polymer comprises a blend of a nylon homopolymer and a nylon copolymer comprising repeating units derived from cyclic lactam, a C_{6-10} diamine monomer and a C_{6-10} diacid monomer.

138. A method of making fine fiber material comprising a fiber having a diameter about 0.01 to 2 microns, the fiber comprising a linear fiber forming polymer and catalyst, the method comprises forming a solution comprising lower alcohol, water or mixtures thereof and about 3 to 30 weight percent of polymer composition, exposing the polymer solution to an electric field of potential greater than a threshold potential

volts causing solution to form accelerated strands of solution that dry to a fine fiber, collecting the fine fiber on a substrate and exposing the fine fiber to a heat treatment, the heat treatment raising the temperature of the fine fiber to a temperature less than the melting temperature of fiber forming polymer.

139. The method of claim 138 wherein the threshold potential is about 10 x 10^3 volts.

140. The method of claim 138 wherein the polymer is a crosslinkable polymer.

141. The method of claim 138 wherein an acidic catalyst is used.

142. The method of claim 138 wherein the polymer comprises mixed fiber forming and non-fiber forming polymers.

143. The method of claim 138 wherein the fine fiber is found between two substrates.

144. The method of claim 138 wherein the fine fiber layer can be exposed to an alcoholic solvent at 70°F and wherein at least 50% of the fiber remains after 5 minutes.

145. A fine fiber layer comprising fiber with a diameter of about 0.1 to 0.5 microns that after exposure to 140°F air and a relative humidity of 100% retains greater than 50% of the fiber unchanged.

146. The layer of claim 145 wherein the layer retained greater than 50% of the fiber.

147. The layer of claim 145 wherein the layer retained greater than 80% of the fiber.

148. The layer of claim 145 wherein the layer retained greater than 90% of the fiber.

149. The layer of claim 145 wherein the temperature used is greater than 160°F.

150. The layer of claim 145 wherein the fiber size is 0.1 to 0.2.

151. The layer of claim 145 wherein the test period is 1 to 16 hours.

152. The layer of claim 145 wherein the test period is 1 hour.

153. The layer of claim 145 wherein the test period is 3 hours

154. A fine fiber layer comprising fiber with a diameter of about 0.1 to 0.5 microns that after exposure to 140°F air and a relative humidity of 100% retains greater than 30% of the fine fiber layer efficiency.

155. The layer of claim 154 wherein the layer retains greater than 50%.

156. The layer of claim 154 wherein the layer retains greater than 80%.

157. The layer of claim 154 wherein the layer retains greater than 90%.

158. The layer of claim 154 wherein the temperature used is greater than 160°F.

159. The layer of claim 154 wherein the fiber size is 0.1 to 0.2

160. The layer of claim 154 wherein the test period is 1 to 16 hours.

161. The layer of claim 154 wherein the test period is 1 hour.

162. The layer of claim 154 wherein the test period is 3 hours.

163. A fine fiber layer comprising fiber with a diameter of about 0.01 to 0.2 microns that after exposure to 140°F air and a relative humidity of 100% retains greater than 50% of the fiber unchanged.

164. The layer of claim 163 wherein the layer retains greater than 50%.

165. The layer of claim 163 wherein the layer retains greater than 80%.

166. The layer of claim 163 wherein the layer retains greater than 90%.

167. The layer of claim 163 wherein the temperature used is greater than 160°F.

168. The layer of claim 163 wherein the fiber size is 0.1 to 0.2.

169. The layer of claim 163 wherein the test period is 1 to 16 hours.

170. The layer of claim 163 wherein the test period is 1 hour.

171. The layer of claim 163 wherein the test period is 3 hours.

172. A fine fiber layer comprising fiber with a diameter of about 0.01 to 0.2 microns that after exposure to 140°F air and a relative humidity of 100% retains greater than 30% of the fine fiber layer efficiency.

173. The layer of claim 172 wherein the layer retains greater than 50%.

174. The layer of claim 172 wherein the layer retains greater than 80%.

175. The layer of claim 172 wherein the greater than 90%.

176. The layer of claim 172 wherein the temperature used is greater than 160°F.

177. The layer of claim 172 wherein the fiber size is 0.1 to 0.2.

178. The layer of claim 172 wherein the test period is 1 to 16 hours.

179. The layer of claim 172 wherein the test period is 1 hour.

180. The fine fiber of claim 67 wherein the crosslinking agent comprises a homopolymer comprising repeating units of acrylic acid, the polymer having a molecular weight of about 1000 to 5000 and an acidic catalyst.

181. The fine fiber of claim 180 wherein the coating has a thickness of less than about 30 Å.

182. The fine fiber of claim 180 wherein the coating has a thickness of less than about 10 Å.

183. The composition of claim 91 wherein the nylon copolymer is combined with a second nylon polymer, the second nylon polymer comprising an alkoxy alkyl modified polyamide.

184. A fine fiber composition comprising a polymer comprising polyvinyl alcohol and a crosslinking agent.

185. The fine fiber of claim 184 wherein the polyvinylalcohol is crosslinked with about 1 to 40 wt.% of the crosslinking agent.

186. The fine fiber of claim 185 wherein the crosslinking agent comprises a polymer comprising repeating units of acrylic acid, the polymer having a molecular weight of about 1000 to 5000.

187. The fine fiber of claim 185 wherein the polymer comprises an acrylic acid copolymer having a molecular weight of 1000 to 5000 .

188. The fine fiber of claim 185 wherein the polymer comprises an acrylic acid homopolymer having a molecular weight of 1000 to 5000 .

189. The composition of claim 185 wherein the crosslinked polyvinylalcohol is crosslinked using a melamine-formaldehyde resin having a molecular weight of about 1000 to 3000.